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SECTOR 5

ENGLAND—THE RIVER THAMES

Plan.—This sector describes the River Thames from its entrance at The Nore to London Bridge. Also included within this sector is a description of the River Medway and the Port of Chatham. The general descriptive sequence is from seaward.

General Remarks

5.1 The River Thames, the most important though not the largest river in Great Britain, rises from three sources which unite near Lechlade (51˚42'N., 1˚41'W.), where the counties of Gloucester, Wiltshire, Berkshire, and Oxfordshire border on each other. Then, in a winding course and receiving several tributaries, the river takes a general E direction for about 180 statute miles to its estuary at The Nore, about 42 nautical miles below London Bridge, where it unites with the River Medway. The river is about 240m wide at London Bridge, 450m wide at Woolwich, and 1,300m wide at Gravesend.

The Thames, from London to The Nore, is in many places retained within its present limits by embankments. The surface of the river at HW is often up to 1m higher than the surrounding countryside.

A dredged and buoyed channel leads from the Nore to London Bridge. The least charted depths are stated with the description of each section of the fairway; however, these depths may vary. The Port Control Center London will provide the latest information on depths within the river channels.

Between Gravesend and Tower Bridge (51˚30'N., 0˚04'W.), the only obstruction in the main fairway is the Thames Tidal Barrier in Woolwich Reach, where traffic is controlled.

The port of **London** (51˚27'N., 0˚21'E.) (World Port Index No. 31470) comprises all tidal waters of the River Thames and Tilbury Docks, excluding that part of the estuary under the jurisdictiom of the Medway Ports Authority.

Note.—The Nore (51˚29'N., 0˚51'E.) is a name frequently used to refer to the area lying N of the Isle of Sheppey where The Warp leads into the approach channels for the River Medway and Sea Reach.

Tides—Currents.—Tides at Tilbury rise about 6.4m at springs and 5.3m at neaps.

Tides at Woolwich rise about 6.4m at springs and 5.4m at neaps. Tides at London Bridge rise about 7.1m at springs and 5.9m at neaps.

In the River Thames and the River Medway, the sea level is raised by strong and long continued N and NW winds; the opposite effect is caused by strong and long continued SSE and S winds.

Both the duration and the velocity of the ebb tidal current are increased during and after heavy rain; the flood current is correspondingly reduced.

At all bends in the river channel, the tidal currents, both on the ebb and the flood, set towards the outer bank; the current is weak and eddies may form behind the point on the inner sides of the bends.

In Sea Reach, the flood current is reported to attain a velocity up to 3 knots at springs and the ebb current up to 3.5 knots.

Pilotage.—See Pilotage for the Thames Estuary in paragraph 4.1.

Regulations.—A mandatory Vessel Traffic Service (VTS) system operates in the approaches to the Port of London and in the River Thames. It is managed by Port Control London, located at Gravesend, and Woolwich Radio, located at the Thames Barrier Navigation Center.

Port Control London provides a traffic organization service between the seaward approaches and Crayford Ness (51˚29.1'N., 0˚12.6'E.). This station may be contacted on VHF channel 12 when E of Sea Reach No. 4 Lighted Buoy (51˚29.6'N., 0˚44.3'E.) and on VHF channel 68 when W of it.

Woolwich Radio provides a traffic organization service in the tidal area of the Thames above Crayford Ness. This station may be contacted on VHF channel 14.

All vessels over 50 grt or over 40m in length are designated as Reporting Vessels.

See Regulations in paragraph 4.1 for VTS procedures in the Thames Estuary and call-in positions (Reporting Points) located between the seaward limit of the VTS area and Sea Reach No. 4 Lighted Buoy.

All Reporting Vessels are required to report to Port Control London on VHF channel 68 when passing the following points:

1. Sea Reach No. 4 Lighted Buoy (51˚29.6'N., 0˚44.3'E.) (frequency change).
2. Sea Reach No. 7 Lighted Buoy (51˚30.1'N., 0˚36.8'E.).
3. Shommead (51˚27.3'N., 0˚26.4'E.).
4. Gravesend (51˚26.9'N., 0˚22.6'E.) (inbound only).
5. Tilburyness (51˚27.1'N., 0˚20.0'E.) (outbound only).
6. West Thurrock Power Station (51˚27.9'N., 0˚17.7'E.).

All Reporting Vessels are required to inform Woolwich Radio on VHF channel 14 when passing the points listed below. In addition, reports are mandatory for all vessels equipped with VHF, irrespective of size, which intend to navigate through or within the Thames Barrier Control Zone. This latter zone extends between Margaret Ness (51˚ 30.5'N., 0˚05.5'E.) and Blackwall Point (51˚30.3'N., 0˚00.2'E.). The reporting points are, as follows:

1. Crayford Ness (51˚29.1'N., 0˚12.6'E.) (frequency change)—Inbound and outbound, mandatory only for inbound Reporting Vessels intending to enter the Thames Barrier Control Zone. Vessels must report ETA at the Barrier or at a destination within the zone if not passing through the Barrier (see Note 1).
2. Ford Motor Works Dagenham (51˚30.5'N., 0˚09.6'E.)—Inbound and outbound, mandatory for Reporting Vessels only.
3. Margaret Ness (51˚30.5'N., 0˚05.5'E.)—Inbound only, mandatory for all vessels equipped with VHF. Vessels

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must request clearance to enter the Barrier Zone (see Note 2 and Note 3).

4. Blackwall Point (51˚30.3'N., 0˚00.0'E.)—Outbound only, mandatory for all vessels equipped with VHF. Vessels must confirm ETA at the Barrier given at London Bridge and request clearance to enter the Barrier Zone (see Notes 2 and 3).

5. Surrey Entrance, Wapping (51˚30.3'N., 0˚03.1'W.)—Inbound only, mandatory for Reporting Vessels only.

6. London Bridge (51˚30.5'N., 0˚05.0'W.)—Outbound only, mandatory only for Reporting Vessels intending to enter the Thames Barrier Control Zone. Vessels must report ETA at the Barrier or at a destination within the zone if not passing through the Barrier (see Note 1 and Note 4).

Note 1.—Reporting Vessels leaving berths or locks between Crayford Ness and Margaret Ness (inbound) and between London Bridge and Blackwall Point (outbound) must report ETA at the Barrier or destination 30 minutes before entering the zone.

Note 2.—All vessels equipped with VHF leaving berths or locks within the Barrier Control Zone must report 30 minutes before departing the berth or lock and again immediately prior to leaving. Permission to proceed must be requested.

Note 3.—Span allocation will be given, along with clearance to enter the Barrier Control Zone.

Note 4.—All Reporting Vessels navigating between Tower Bridge (51˚30.3'N., 0˚04.5.'W.) and Wandsworth Bridge are required to carry an electronic keying device to activate the isophase lights on these bridges. Such vessels should use the bridge arches displaying these lights. Reporting Vessels not fitted with a keying device or experiencing technical difficulties should contact Port Control London or Woolwich Radio.

Information broadcasts made by Woolwich Radio (see paragraph 4.1) include the bridge spans that are open for navigation. Notification of actual or intended closure of the Thames Barrier will be included when appropriate.

The area between Bulls Point (Gallions Point) (51˚30.0'N., 0˚05.4'E.) and Ware Point, 0.6 mile NE, encompasses the London City Airport glide path. All vessels, including pontoons carrying mobile cranes, having an air draft of 30.5m or more and intending to navigate in this area should inform Woolwich Radio at the earliest opportunity of their intensions. Such vessels must not enter the area without permission. Vessels with an air draft of more than 45m are required to give 24 hours notice.

Restrictions for overtaking exist above Tilburyness and at any time a large vessel or vessel carrying dangerous cargo is involved. In such circumstances, vessels must obtain clearance for overtaking from the appropriate control station.

Vessels, with an air draft over 45m, intending to pass under the Queen Elizabeth II Bridge, should contact Port Control London in advance so that the lights indicating Tall Ships Navigation Channel can be switched on. This bridge spans Long Reach (51˚28'N., 0˚15'E.) and has a vertical clearance of 54m.

Additional regulations are in force for vessels navigating in the River Thames and vessels are advised to acquire a copy of the Port of London River Bylaws.

Anchorages.—Designated anchorages within the River Thames are, as follows:

1. Great Nore (51˚28’N., 0˚49’E.), unlimited stay, ocean-going vessels. This anchorage is exposed to E and NW gales, which when combined with the tidal currents, cause a considerable sea. The best berth lies in depths of 14 to 16m, mud and sand, about 3 miles NE of Garrison Point.

2. Southend Small Ship (51˚31'N., 0˚44'E.), unlimited stay.

3. Leigh Small Ship (51˚31'N., 0˚41'E.), unlimited stay.

4. Yantlet Small Ship (51˚30'N., 0˚40'E.), unlimited stay.

5. Thames Haven Anchorage (51˚30'N., 0˚30'E.), tankers only, limited to 12-hour stay.

6. Mucking (51˚29'N., 0˚27'E.), explosives in emergency only.

7. Highham Bight (51˚27'N., 0˚26'E.), unlimited stay, ocean-going vessels.

8. Gravesend Lower (51˚27’N., 0˚24’E.), ocean-going vessels, limited to 12-hour stay.

9. Gravesend Upper (51˚27’N., 0˚22’E.), ocean-going vessels, limited to 12-hour stay.

10. St. Clement (51˚28'N., 0˚18'E.), ocean-going vessels, limited to 12-hour stay.

11. Long Reach (51˚27’N., 0˚15’E.), ocean-going vessels, limited to 12-hour stay.

12. Off Greenhithe (51˚27'N., 0˚17'E.) and in the river above Long Reach, there are several anchorages, indicated on the chart, where vessels may stay for not more than 2 hours.

13. For further information, see Anchorage under the Thames Estuary in paragraph 4.1.

Caution.—A Restricted Area, the limits of which are shown on the chart, extends 2 miles E of Sea Reach No. 1 Lighted Buoy. Vessels entering this area should do so with extreme caution as large deep-draft vessels, with limited maneuverability, and other crossing traffic, may be encountered. In addition, anchoring within this area is prohibited.

Several submarine gas pipelines lie across the river channel and may best be seen on the chart.

Several submarine cables lie across the river channel and may best be seen on the chart.

Ferries cross the river channel at several points and may best be seen on the chart.

Several foul and spoil ground areas lie within the river adjacent to the fairway and may best be seen on the chart.

Dredging is periodically carried out within the river channels; information on the latest depths should be obtained from Port Control London or Woolwich Radio.

Sea Reach to London Bridge

5.2 Sea Reach (51˚29'N., 0˚48'E.), at the entrance to the river, extends W for 12 miles from its entrance abreast Shoebury Ness to Lower Hope Point. It varies in width from about 4 miles at its E end to about 1 mile at its W end. However, the width of the navigable channel is reduced by sand banks and mud flats, which dry and extend from the shore on both sides of the river. A major facility within this reach is the oil complex, known in its entirety as Shellhaven, which is situated at the NW end.

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Yantlet Dredged Channel is entered from The Warp or Oaze Deep and leads through Sea Reach. It has depths of 12.5m at its E end and 10m at its W end.

Leigh Channel, lying N of Yantlet Dredged Channel, leads W and WNW from The Warp to the promenade pier which extends S from Southend on Sea. This channel, which is not marked, lies between Southend Mud Flat and Leigh Middle and narrows at its W end. Ray Gut, with depths of 0.3 to 4m, leads from the W end of Leigh Channel to Leigh on Sea, situated 2.4 miles W of Southend.

Southend on Sea, situated 2.5 miles WNW of Shoebury Ness, is a resort town which is partly built on elevated ground and faced with cliffs. A promenade pier, which has a depth of 5.5m alongside its head, extends 1.4 miles S from about the middle of the town and is prominent. A conspicuous hotel stands near the root of the pier.

The coast between Southend and Leigh consists of cliffs, but they are not conspicuous because of the buildings. Leigh, a yachting and fishing boat center, stands on the side of a hill. A prominent water tower stands 3 miles W of the town.

Canvey Island, located 5 miles W of Southend, is low, marshy, and embanked. The coast between Southend and Scar's Elbow, the S extremity of the island, is fronted by Southend Mud Flat, Leigh Sand, Marsh End Sand, and Chapman Sand, which dry 0.3 to 4.9m. Flares from burning gases are visible at numerous chimneys, which stand about 0.5 mile N of the various oil jetties.

5.3 The **Isle of Grain** (51˚27'N., 0˚42'E.), located on the S side of Sea Reach, is part of the main coast, and is low, flat, and embanked. Grain stands on its E end and Yantlet Creek empties into the river, 2 miles NW of this village. London Stone, a monument, and a beacon stand on either side of the entrance to the creek.

Prominent landmarks in this vicinity include the buildings of Whitehouse Farm and White Hall Farm near Grain; the water tower at Windhill Green, 3.2 miles WNW of Grain; and Lees Tower, standing on the coast, 1 mile NNW of Grain.

Conspicuous landmarks include the church tower at St. Mary's Hoo, 4.5 miles W of Grain, and the chimney, 244m high, standing at the power station, 0.5 mile SSW of Grain.

The N shore of the Isle of Grain is fronted by Grain Spit, Yantlet Flats, and Blyth Sands, which dry 0.3 to 3.6m and extend up to 0.7 mile offshore. Nore Sand, marked by a lighted buoy, lies 1.6 miles NE of Grain. This bank has a least depth of 2.5m and is separated from Grain Spit by a swatchway.

For a description of the terminals located at the S side of the Isle of Grain, see paragraph 5.33.

Canvey Island Terminal (51˚31'N., 0˚34'E.), which includes Holehaven, consists of five main berthing jetties extending from the S side of Canvey Island, with facilities for oil and gas tankers. Tankers up to 200m in length and gas carriers up to 300m in length, with drafts up to 11m, can be accommodated alongside.

Coryton Oil Terminal (51˚31'N., 0˚32'E.) is situated close W of Canvey Island Terminal and consists of five main berthing jetties, with depths up to 14m alongside. Vessels up to 310,000 dwt, 366m in length, and 13.7m draft can be accommodated alongside.

Thameshaven (Shell Haven) (51˚31'N., 0˚29'E.) is situated about 1.5 miles W of Coryton Terminal and consists of four main berthing jetties. Vessels up to 335m in length and 14.6m draft can be accommodated alongside.

It is reported (2002) that this terminal is no longer in use and is being developed into a container facility. Demolition and construction work are being carried out in the vicinity of this terminal.

Signals.—Traffic warning signal lights are shown from two stations situated in the vicinity of the above oil and gas terminals, and are visible both up and down the river. These powerful flashing white lights are shown by day and at night to warn shipping that the fairway may be obstructed by tankers of over 7,500 grt, berthing or unberthing. Both sets of lights are operated simultaneously and are shown from the time a tanker passes Sea Reach No. 6 Lighted Buoy until the vessel is berthed. When such tankers are leaving, the lights are shown from 15 minutes before departure until the vessel is steady on a course down the authorized channel.

Caution.—Vessels must exercise caution when navigating in the vicinity of the refineries at Coryton, Canvey Island, and Thameshaven. All vessels must maintain a minimum separation of 60m from berthed tankers or jetties serving the refineries.

5.4 **Lower Hope Reach** (51˚28'N., 0˚27'E.) extends SW for 3 miles from Lower Hope Point, at the SW end of Sea Reach, to Coal House Point. Its W bank is fronted by Mucking Flats and Ovens Flat, which both dry. The fairway channel has a least charted depth of 9.1m.

Three wharves are situated on the E side of Lower Hope Reach. Alpha Jetty, an ore berth, is 149m long and has a depth of 9.1m alongside. Jet Jetty, an oil berth, has a depth of 13.3m alongside. Clubb Jetty, situated at the S end, is an ore berth. It is 100m long and has a depth of 8m alongside.

Regulations.—A night petroleum limit line has been established in the vicinity of Coalhouse Point and is indicated on the chart. Ocean-going tankers may not proceed further upriver than this limit line at night.

5.5 **Gravesend Reach** (51˚27'N., 0˚23'E.) extends for 3.5 miles between Coal House Point and Tilbury Ness. Its N shore is embanked and fringed by a mud flat which dries. The fairway channel has a least charted depth of 7.6m.

Gravesend (51˚27'N., 0˚22'E.) (World Port Index No. 31420) stands on the S bank of this reach, 22.7 miles below London Bridge. This town is built on the declivity of a hill sloping down to the river and is fronted by the Royal Terrace Pier. The Port of London Harbor Master's Office and the Thames Navigation Service Building stand near the root of the pier. See Pilotage for the River Thames.

Conspicuous landmarks in this vicinity include two chimneys, 167m high, standing at Tilbury Power Station, 1.5 miles W of Coal House Point (51˚27.6'N., 0˚25.8'E.); and a chimney standing at the cement works 0.3 mile W of Bowaters Wharf.

The principal wharves on the S side of the reach are Denton Wharf, which is situated E of Gravesend, and Imperial Wharf; Red Lion Wharf; Bowater Northfleet Terminal Wharf; Bevans Wharf; and Bevans Jetty, which are situated W of Gravesend.

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Denton Wharf is 145m long and has a depth of 5m alongside. Imperial Wharf provides two berths, 91m and 92m long, with a depth of 9m alongside. Red Lion Wharf is 240m long and has a depth of 7m alongside. Bowater Northfleet Terminal Wharf is 188m long and has a depth of 9.7m alongside. Bevans Wharf is 299m long and has a depth of 13m alongside. Bevans Jetty is 175m long and has a depth of 9m alongside.

The principal wharves on the N side of the reach are Tilbury Power Station Jetty; and London Cruise Terminal, which includes a ro-ro berth at its W end. London Cruise Terminal Wharf is 343m long and has a depth 9.5m of alongside.

5.6 Northfleet Hope Reach (51˚28'N., 0˚20'E.) extends for 1.5 miles between Tilbury Ness and Broadness. Both its banks are low, marshy, and fringed by mud flats. The fairway has a least charted depth of 9m.

A conspicuous church, with a square tower and a pyramidal spire, stands in the town of Grays, at the NE end of the reach. Several conspicuous cranes stand at the container berths situated at the E side of the reach.

The principal wharf on the W side of this reach is Tower Wharf. It is 198m long and has a depth of 11.5m alongside. Vessels up to 40,000 dwt, 200m in length, and 10.5m draft can be handled.

5.7 Tilbury Docks (51˚27.3'N., 0˚20.8'E.), a wet dock complex, is situated at the SE end of this reach and provides 45 berths. It is entered through a lock, 304.8m long and 33.5m wide, which has a depth of 7.3m over the sill. The berths have depths of 10.8 to 11.6m alongside. Vessels up to 262m in length, 32.3m beam, and 11.4m draft can be accommodated. There are extensive facilities for timber, container, bulk, and ro-ro vessels within the complex.

Dredging is frequently carried out in the approach to the lock and the latest information on depths should be obtained from the Thames Navigation Service. Vessels can contact the Tilbury Dock Entrance Station on VHF channel 4 to obtain berthing instructions.

Northfleet Hope Container Terminal is situated on the E side of the reach, close N of the entrance to Tilbury Docks. The riverside quay is 600m long and has a depth of 13.5m alongside. It can accommodate vessels up to 40,000 dwt.

Tilbury Grain Terminal is situated on the E side of the reach, 0.4 mile N of the container terminal. The main berth is 275m long and has a depth of 12.8m alongside. It can accommodate vessels up to 83,000 dwt.

5.8 St. Clement's Reach (Fiddler’s Reach) (51˚28'N., 0˚18'E.) extends for 1.5 miles between Broadness and Stone Ness. Both of its banks are low, marshy, embanked, and fringed by mud flats. The fairway has a least charted depth of 8.6m.

An overhead power cable, with a vertical clearance of 76m, spans this reach 0.5 mile WSW of Broadness. It extends between two framework towers, 193 and 194m high, which are conspicuous.

On the N side, two conspicuous chimneys 152m high, stand at a power station, close NW of the overhead cable tower. On the S side, several conspicuous chimneys, the highest with a height of 76m, stand at a cement works, 1 mile S of Broadness.

Northfleet Hope Container Terminal

A prominent radar tower, 15m high, and a prominent lattice mast, 55m high, stand about 0.2 mile SSE of Broadness.

The principal wharves in this reach include White's Jetty and Empire Paper Mills' Jetty, on the S bank, and Gibbs Wharf and Wouldhams Jetty, with a depth of 11m alongside, on the N bank.

5.9 Long Reach (51˚28'N., 0˚15'E.) extends for 3 miles between Stone Ness and Crayford Ness. Both its banks are fringed by mud flats, which dry up to 4m. The fairway has a least charted depth of 8.2m.

The Queen Elizabeth II Bridge, with a vertical clearance of 54m, spans this reach, 0.9 mile above Stone Ness.

The ventilation towers of the Dartford-Purfleet Tunnel, which lies under this reach, stand on both banks, about 1 mile above Stone Ness. They are conspicuous, elongated, inverted, cone-shaped structures. A prominent radar tower, 23m high, and a prominent lattice mast, 38m high, stand at Crayford Ness.

The principal wharves on the NE side include West Thurrock Oil Terminal (Thames Matex), which can accommodate vessels up to 228m in length and 11.2 draft; Tunnel Jetty; Purfleet Deep Water Wharf, which has facilities for ro-ro vessels; Esso Wharves, which can accommodate vessels up to 117m in length and 6.9m draft; and Cory's Jetty (Powell Duffryn), which can accommodate vessels up to 45,000 dwt and 238m in length.

The principal wharves on the SW side include Littlebrook Power Station Jetty and Dartford International Ferry Terminal, which has two ro-ro berths and can accommodate vessels up to 240m in length, 32.2m beam, and 11.5m draft.

Note.—Crayford Ness is the limiting point of operational control for the Port of London VTS system. Port Contol London operates in the area to the E of this point and Woolwich Radio operates in the area to the W of it. See Regulations under General Remarks in paragraph 5.1 for further information.

5.10 Erith Rands Reach (51˚29'N., 0˚12'E.) extends W for about 1 mile between Crayford Ness and Coldharbor Point. The fairway has a least charted depth of 7.5m.

The town of Erith, with several church spires, is situated at the SW side of this reach.

The principal wharf is Erith Deep Water Wharf, with a ro-ro pontoon berth at its W end, situated at the SW end of the reach.

Erith Reach (51˚30'N., 0˚11'E.) extends N for 1.3 miles between Coldharbor Point and Jenningtree Point. The fairway has a least charted depth of 7.3m.

The conspicuous spire of a church stands at the SW side of the reach, 0.7 mile W of Coldharbor Point. Rainham Creek, located at the NE side of the reach, is closed to navigation by a dam.

The principal wharves include Coldharbour Jetty (Rainham Refuse Jetty), Copper Jetty, and Phoenix Jetty, on the E side of the reach; Erith Oil Works, Pioneer Wharf, and Mulberry Wharf lie on the W side of the jetty.

Halfway Reach (51˚31'N., 0˚09'E.) extends for 1.5 miles between Jenningtree Point and Cross Ness (Leather Bottle Point). The fairway has a least charted depth of 7m.

A conspicuous chimney, 38m high, stands 0.4 mile WNW of Jenningtree Point. The prominent buildings of the Ford Motor Works stand on the N side of the reach.

The principal wharves are Ford Motor Works Jetty; Amey Roadstone Jetty; Thunderer Jetty; and Dagenham Oil Wharf, which can accommodate vessels up to 228m in length and 10m draft.

Barking Reach (51˚31'N., 0˚07'E.) extends for 1.5 miles between Cross Ness and Margaret Ness or Tripcock Point. The fairway has a least charted depth of 6.4m.

Barking Creek, which dries, is located at the NW end of the reach. A tidal barrier spans the entrance to the creek and red warning lights are shown when it is in the closed position.

The principal wharves are Barking Jetty and Thames Water Jetty on the N side of the reach.

Note.—Traffic warning lights for the Thames Tidal Barrier are shown from both banks of the reach near its W end (see paragraph 5.13).

Regulations.—A day petroleum limit line has been established at the W end of this reach and is indicated on the chart. Ocean-going tankers carrying low flash products may not proceed above this limit line.

5.11 Gallions Reach (51˚30'N., 0˚05'E.) extends for 0.9 mile between Margaret Ness or Tripcock Point, and Gallions or Bull's Point. The fairway has a least depth of 6.1m.

Extensive gas works, with numerous buildings, tanks, and chimneys, are situated on the NW side of the reach.

The Royal Docks, comprising King George V Dock, Albert Dock, and Victoria Dock, are situated on the W side of the reach and are closed to shipping. A STOL (Short Take Off and Landing) airport is situated on the quay within these docks.

Caution.—The area between Gallions Point and Ware Point encompasses the London City Airport glide path. All vessels, including pontoons with mobile cranes embarked, having an air draft of 30.5m or more intending to navigate between Gallions Point and Ware Point must, at the earliest opportunity, inform Woolwich Radio on VHF channel 14 or 16 of their intention. They must not enter the area until authorized to do so by Woolwich Radio.

5.12 Woolwich Reach (51˚30'N., 0˚03'E.) extends for 2 miles between Gallions or Bull's Point and Hook Ness. The fairway has a least charted depth of 5.2m.

North Woolwich and Silvertown stand on the N bank; Woolwich and New Charlton extend along the S bank of the reach. The Royal Arsenal Woolwich is situated at the SE end of the reach.

A conspicuous radar tower, 43m high, stands near the NE end of the reach on the ferry terminal jetty.

The principal wharf is Tate and Lyle Jetty, on the N side of the reach, which can accommodate vessels up to 23,000 dwt, 172m in length, and 8.8m draft.

5.13 The **Thames Tidal Barrier** (51˚30'N., 0˚02'E.) is designed to protect the city and surrounding areas from flooding. It consists of nine piers, numbered from N to S, between which rotating gates can be operated to form a barrier when exceptionally high tides are expected. When in the open position, the rotating gates lie flush with the river bed sills.

The spans between the piers are designated A to K (omitting I) from S to N. Span A and Span H to Span K are crossed by walkways and are not navigable. Span B and sG, adjacent to the fairway, are navigable but narrow, with only a charted depth of 1.2m over the gate. The main navigation spans are Span C, Span D, Span E, and Span F, which are each 61m wide and have a charted depth of 5.8m over the gate. Traffic through each span is one-way.

The Thames Barrier Control Zone extends from the vicinity of Margaret Ness (51˚30'N., 0˚06'E.) to the vicinity of Blackwell Point (51˚30'N., 0˚03'E.).

Information about the spans in use and warning of the closure of the barrier are broadcast by Woolwich Radio on VHF channel 14.

Thames Tidal Barrier (passage open)

Thames Tidal Barrier

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Regulations.—For regulations concerning navigation in the vicinity of the Thames Barrier, see paragraph 5.1.

Extracts from the special restrictions include the following:

1. Vessels over 100m in length are required to secure a tug forward before proceeding through the Barrier.
2. Vessels over 131m in length are required, in addition to the first tug, to have a second tug in attendance.
3. Overtaking, anchoring, and maneuvering are prohibited in the vicinity of the Tidal Barrier between Woolwich Ferry Terminal and Gulf Oil Island Jetty.
4. Navigation through the Tidal Barrier is forbidden in visibility of less than 0.5 mile for vessels over 50m in length.

Signals.—Green lights, forming arrows, are situated on the piers at each side of the spans. The arrows, when shown pointing inwards from each side, indicate that the span is in use and clear for traffic.

Red lights, forming a St. Andrews cross ("X" shaped), shown on each side of a span, indicate that the span is closed to traffic either because a vessel is approaching from the other direction or is closed completely.

During low visibility, high intensity direction lights are shown, in addition to the green lights, from each side of the spans in use.

Three red lights, in the form of a triangle pointing down, are shown from the upriver and downriver sides of the walkways above Span A, Span H, Span J, and Span K.

Warning lights are shown from notice boards on both sides of the river at Thamesmead (51˚30'N., 0˚07'E.) and Blackwell Point (51˚30'N., 0˚03'E.).

Yellow flashing lights indicate that vessels must proceed with extreme caution as the Tidal Barrier is about to be closed.

Red flashing lights indicate that the Tidal Barrier is being closed and all vessels should stop.

When visibility is reduced, a sound signal (Morse code K) is emitted from the notice board sites. Vessels with VHF should contact the Thames Barrier Navigation Control Center (Woolwich Radio); other vessels should stop and listen to the loud hailer messages, which will be operated from the notice board sites.

5.14 Bugsby's Reach (51˚30'N., 0˚01'E.) is a small section of the river, 0.8 mile long, lying between Hook Ness and Blackwall Point. The fairway has a least charted depth of 5.2m.

The principal wharves in this reach include a large T-headed jetty, which fronts the prominent South Metropolitan Gas Works, on the W side, and Coburn Wharf, Thames Wharf, and Manhattan Wharf, on the E side. Greenwich Yacht Club moorings are laid off the W bank, opposite Hook Ness. Bow Creek, leading to the River Lea, is entered from the NE side of the reach.

Blackwall Reach (51˚30'N., 0˚00'W.) extends for about 1 mile between Blackwall Point and the SE end of the Isle of Dogs, which forms the W bank. The fairway has a least charted depth of 4.7m.

East Greenwich is located along the E bank of this reach and is connected to Blackwall by two tunnels. The conspicuous Canary Wharf Tower stands NW of the N end of the reach. The entrances to the former West India and Millwall Docks, which are closed to shipping, are situated on the NW side of this reach.

The principal wharves in the reach include Ordinance Wharf, Delta Wharf, and Tunnel Glucose Wharf on the E side.

5.15 Greenwich Reach (51˚29'N., 0˚01'W.), about 1.3 miles long, is a horseshoe bend in the river which curves around the S side of the Isle of Dogs. The fairway has a least charted depth of 4.4m.

Cubitt Town and Millwall, consisting mostly of commercial buildings, occupy the N bank of the reach; Deptford and Greenwich stand on the S bank. Greenwich Pier is situated near the middle of the S side of the reach. The Royal Naval College, consisting of four prominent blocks of buildings forming an open square towards the river, stands close E of Greenwich Pier. A foot tunnel, marked on each bank by a cupola, crosses the reach close W of the pier. Deptford Creek, which is the mouth of the Ravensbourne River, is entered at the SW end of the reach.

The principal wharves in the reach include Granite Wharf, Lovells Wharf, and Convoys Wharf, on the S side. The latter wharf has two ro-ro berths and can accommodate vessels up to 170m in length and 7.5m draft.

Note.—The Old Royal Observatory, no longer in use, stands at an elevation of 44m about 0.5 mile SSE of Greenwich Pier. The Great Transit Instrument, through which the Prime Meridian passes, is situated here.

5.16 Limehouse Reach (51˚30'N., 0˚02'W.) extends N for 0.8 mile from Greenwich Reach and then curves W into Lower Pool. The fairway has a least charted depth of 3.5m.

The former Surrey Commercial Docks at Rotherhithe, on the W side of the reach, are closed and mostly filled in. Regents Canal Dock is entered on the N side of the reach at the NW end and connects with the inland waterways canal system.

The principal wharves in this reach include London Steel Terminal Wharf and Dundee Wharf on the NE side.

Lower Pool (51˚30'N., 0˚03'W.), a reach 1 mile long, extends between the entrance to Regents Canal Dock, at the NW end of Limehouse Reach, and Cherry Garden Pier, situated on its SW side. The fairway has a charted depth of 4.3m.

The former London Docks, situated on the NW side of the reach, are closed. Two tunnels cross the reach and are indicated on the chart.

The principal wharf in this reach is Bellamy's Wharf, on the S side.

Upper Pool (51˚30'N., 0˚04'W.), a reach 1 mile long, extends between Cherry Garden Pier, at the SW end of Lower Pool, and London Bridge. The fairway has a least charted depth of 4.7m up to the "Belfast", then less than 2m; outside the fairway, the depths are considerably less.

St. Katharine Yacht Haven, the former St. Katharine Docks, is entered through a lock situated on the N side of the reach. Vessels up to 27m in length and 3.6m draft can be accommodated.

The conspicuous Tower of London stands on the N bank, close above Tower Bridge. The cruiser "Belfast", a warship museum, is moored permanently off the S bank between Tower Bridge and London Bridge.

London Bridge spans the river at the W end of Upper Pool and has a vertical clearance of not less than 8m at its center arch.

5.17 **Tower Bridge** (51˚30'N., 0˚04'E.) spans Upper Pool about 0.6 mile above Cherry Garden Pier and has four towers; the higher towers stand on piers in the river and are connected by two fixed foot bridges, with a vertical clearance of 42.5m. Two bascules, with a vertical clearance of 8.6m, carry the roadway; these can be raised to a vertical position, leaving a channel 61m wide.

Tower Bridge

Regulations.—Vessels intending to pass through the bridge and needing the bascules to be opened are required to give 24-hour notice of their ETA to the Superintending Engineer and Tower Bridge Master, Tower Bridge. Failure to provide such notice may result in delay to the vessel.

Signals.—The following traffic signals are shown, both upstream and downstream, by day and at night, from the piers on each side of the bascule bridge:

1. One red light indicates that the bridge is closed, being closed, or being opened.
2. One green light indicates that the bridge is open.

If at any time the bascule bridge, from any unavoidable cause, cannot be opened for the passage of vessels, a disc, painted black and white in diagonal stripes, will be shown close to each end of the bascule bridge; the disc is illuminated at night and shown in addition to the above red light.

In restricted visibility, a high frequency repetitive note of 820 cycles per second will be transmitted for a period of about 10 seconds, followed by a silent period of the same duration. This signal is given in addition to the above green light over a loudhailer system from the N pier of the bridge, while the bascule bridge is open for river traffic.

If it is not possible, due to an electrical failure, to give the above sound signal, hand-beaten gongs will be sounded every 30 seconds from the N pier while the bascule bridge is open for transit.

Unless the signal for the failure of the bridge to open is given, the bascule bridge will be opened in reduced visibility at the ETA time. A sound signal (morse code X) should be made when the vessel concerned is ready and in position to pass through.

The following navigational marks have been established to assist vessels passing under the bridge:

1. A conspicuous white vertical stripe is situated on each bascule at both sides of the bridge. There is a distance of 17m between each pair of stripes.
2. Headway gauge-boards are situated on the downriver dolphin at Cherry Garden Pier and on the upriver dolphin at Tower Pier, about 300m above the bridge. These boards indicate the tide level and amount of headway, in feet, below and between the white vertical stripes on the bascules.

Caution.—There is a delay of about 2 minutes after the bridge has been cleared of traffic before the bascules can commence to open.

Vessels are warned against anchoring within 45m of the bridge piers because of the erosion of the river bed in the vicinity.

5.18 In addition to the principal wharves listed above with the reaches, numerous other wharves and jetties are situated on both sides of the River Thames, between Gravesend Reach and London Bridge. These wharves and jetties are owned and/or operated by private manufacturing and service industries and may best be seen on the chart. For information concerning the depths alongside, vessels should contact the Port Control Center London.

The River Thames winds in a general WSW direction for 14 miles between London Bridge and Richmond Bridge (51˚28'N., 0˚18'W.), the limit of tidal navigation. This stretch of river is spanned by 27 bridges, including those at London and Richmond, with a minimum vertical clearance of 3.7m, at Hammersmith Bridge (51˚29'N., 0˚14'W.). Depths in the fairway between London Bridge and Richmond Bridge are generally 2m or less, with some deeper patches in places.

The River Medway

5.19 The **River Medway** (51˚26'N., 0˚44'E.), which rises in the county of Sussex, flows NE across the county of Kent and passes Maidstone, Rochester, and Chatham. It is about 60 miles long and joins the River Thames between the Isle of Sheppey, on the E side, and the Isle of Grain, on the W side. Below Chatham, the river widens into an estuary which is intersected on either side by numerous creeks, their banks being formed by low and marshy islands surrounded by mud flats.

The distance, following the winds of the river, from Garrison Point (51˚27'N., 0˚45'E.) to Rochester Bridge (51˚23'N., 0˚30'E.), the limit of navigation except for small craft, is 11.8 miles and there are 12 bends or reaches between these positions.

The Medway Navigation Service is operated by The Medway Ports Authority and serves shipping in the river and its approaches.

Depths—Limitations.—The approach channel to the River Medway, which lies between Sheerness Middle Sand and the edge of The Cant, has a least charted depth of 11m in the dredged fairway. The river has depths of 12.8 to 21m as far as Oakham Ness.

Aspect.—Medway Lighted Buoy, moored 5.5 miles ENE of Garrisin Point, marks the seaward entrance of the buoyed approach channel.

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Garrison Point (51˚27'N., 0˚45'E.), the E entrance point of the river, is rounded and formed of shingle. A conspicuous fort, a radio mast, and a signal station stand on the point.

The W side of the entrance to the river is bordered by the E side of the Isle of Grain. The landmarks on the NE part of the isle are described with Sea Reach in paragraph 5.2.

Grain Tower, a conspicuous martello tower, stands off the E side of the Isle of Grain, 0.5 mile NW of Garrison Point. Grain Power Station, with a conspicuous chimney 244m high, stands 1.2 miles W of Garrison Point, on the SE part of the isle.

The fairway channel through the reaches is marked by lighted buoys and beacons and, in places, indicated by lighted ranges, which may best be seen on the chart.

Pilotage.—Information concerning pilotage through the Thames Estuary is given in paragraph 4.1.

Pilotage for the River Medway is compulsory for vessels of 50m and over in length. Inbound vessels requiring a pilot should send their ETA message to Medway Navigation Service 24 hours and 8 hours in advance, including the pilot boarding position, grt, length, draft, destination, and last port of call.

Any changes to the vessel's ETA should be sent to Medway Navigation Service or NE Spit Pilot Station. Vessels required to anchor with a pilot on board should send their ETA at the anchorage to Medway Navigation Service as soon as practicable.

Vessels exempt from pilotage should send their ETA message 24 hours in advance including the vessel name; grt; length; draft; destination; last port of call; and the name, initials, and exemption certificate number of the master or first mate who will be piloting the vessel.

For most pilot boarding positions, see pilotage for the Thames Estuary in paragraph 4.1.

Vessels exempt from pilotage through the Outer Area of the estuary can embark a pilot in the vicinity of the Medway Lighted Buoy (51˚29'N., 0˚53'E.), at the entrance to the approach channel.

When a pilot vessel is not on station, information will be broadcast by the appropriate pilot station or through Pilotage Information Messages broadcast by coast radio stations. At such times, vessels may request, from the Port Control Center London, to embark or disembark the pilot at the Medway Lighted Buoy.

Regulations—Traffic Control.—For procedures in the Thames Estuary, see paragraph 4.1.

Within the River Medway and approaches, a port operation and information service is maintained by The Medway Navigation Service.

Inbound vessels over 50 grt should send an ETA to the Medway Navigation Service at least 24 hours in advance, stating the quantity and nature of any dangerous cargo carried or to be loaded. Vessels should then establish contact with the Medway Navigation Service when within VHF range, but not less than 2 hours 30 minutes before arrival at the Medway Lighted Buoy (51˚28.8'N., 0˚52.9'E.).

Inbound and outbound vessels over 50 grt must report to the Medway Navigation Service when passing the following reporting points:

1. Medway Lighted Buoy (also report to Port Control London on VHF channel 12).
2. Position 51˚27.76'N, 0˚47.17'E (between No. 8 Lighted Buoy and No. 10 Lighted Buoy). Outbound vessels only (also report passing Richard Montgomery wreck to Port Control London on VHF channel 12).
3. No. 12 Lighted Buoy (51˚25.7'N., 0˚40.3'E.).
4. Darnett Ness (51˚24.4'N., 0˚35.7'E.).
5. No. 32 Lighted Buoy (51˚24.6'N., 0˚32.1'E.).
6. Chatham Ness (51˚23.2'N., 0˚31.1'E.).

Vessels entering or leaving West Swale (see paragraph 5.21) should report when approaching the Medway Lighted Buoy and at the following reporting points:

1. Queenborough Spit Lighted Buoy (51˚25.8'N., 0˚43.9'E.).
2. Long Point (51˚24.9'N., 0˚43.3'E.).
3. Kingsferry Bridge (51˚23.4'N., 0˚45.0'E.).

Within the river area, vessels should report when passing the reporting points, before anchoring, and on berthing. In addition, vessels underway should keep a continuous listening watch on VHF channel 74 (VHF channel 16 while at anchor).

Outbound vessels or vessels shifting berth should report their ETD and draft to the Medway Navigation Service at least 1 hour in advance and immediately before commencement of the maneuver.

The Medway Navigation Service provides traffic, tidal, and general marine information. Radar advice is available on request. The service will also pass berthing and/or anchorage information to vessels.

Regulations—General.—Regulations similar to those for the Port of London Authority are in force with respect to vessels carrying or loading petroleum or dangerous cargo.

The following are extracts from the River Medway By-laws:

1. No vessel shall navigate at a speed or in a manner which might be expected to cause damage to any other vessel, buoy, moorings, or property within the River Medway Port or Approach Area. No vessel shall exceed the speed of 6 knots when W of Folly Point, or 8 knots when in Queenborough Harbor between a line joining Swale Ness and Queenborough Point, and a line extending W from Long Point to the shore, or when S of Kingsferry Bridge.
2. Vessels carrying a greater quantity than 100 pounds of any explosive or petroleum must fly a red flag at the masthead by day and show an all-around red light at the masthead at night.
3. Between sunset and sunrise, vessels over 130m in length navigating the buoyed channel must not pass or overtake any other vessels between No. 4 Lighted Buoy (51˚28'N., 0˚50'E.) and a line extending W from Garrison Point.

Signals.—Traffic warning signals are shown from the signal station at Garrison Point when the movements of vessels over 130m in length are about to take place and while they are in progress. The warning signal consists of a powerful white light flashing for 2 seconds every 7 seconds. The lights are visible from seaward or from upriver depending on whether the vessel is inbound or outbound. The signal is shown when a vessel is underway in the buoyed channel between the Medway Lighted Buoy and Darnett Ness (51˚24'N., 0˚36'E.), and remains showing until the vessel has berthed or cleared the channel.

Anchorage.—Vessels may anchor for an unlimited period in the anchorages established for vessels entering the River

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Medway. Information on berths within these anchorages should be obtained from the Medway Navigation Service.

Little Nore Anchorage Area (51˚27'N., 0˚45'E.), situated 0.4 mile N of Garrison Point, lies close N of the approach channel. Vessels using this anchorage must avoid swinging into the fairway under the influence of wind or tide.

Sheerness Small Ships Anchorage is situated 1 mile NE of Garrison Point and close SE of the channel.

Vessels anchored on either side of the approach channel may not get underway or enter the channel without first informing the Medway Navigation Service and ascertaining that it is safe to do so.

Vessels awaiting the tide may also anchor in Kethole Reach (51˚25'N., 0˚39'E.), clear of the fairway and the designated foul area.

For additional anchorages, see paragraph 5.1.

Caution.—A prohibited area has been established around the stranded wreck of the SS Richard Montgomery, which sunk in 1944 and is filled with a cargo of dangerous explosives. The wreck, which shows masts and superstructure at HW and is marked by lighted buoys, lies 2 miles NE of Garrison Point and close N of the main channel.

Several submarine cables cross the entrance channel and reaches of the river and may best be seen on the chart.

Several yacht clubs, operating small craft piers and marinas, are situated within the river. In addition, numerous small craft moorings lie at the sides of the channel fairways.

Sheerness (51˚27'N., 0˚45'E.)

World Port Index No. 31370

5.20 Sheerness is located at the NW end of the Isle of Sheppey; the port facilities extend S from Garrison Point.

Sheerness

Tides—Currents.—Tides at Sheerness rise about 5.8m at springs and 4.7m at neaps.

The velocities of the tidal currents in the river vary between about 2.5 knots at springs to 1.5 knots at neaps; however, the velocities also vary considerably within each reach. The maximum velocity is generally encountered off Garrison Point where, during the flood, eddies may be formed.

Depths—Limitations.—The entrance channel has a depth of 11m. The port has a total of about 900m of quayage, which provide six main berths. There are extensive facilities for reefer fruit, ro-ro, automobile, and continental ferry vessels. Generally, vessels up to 230m in length and 11m draft can be accommodated.

Caution.—Extensive reclamation of an area located close S of the port has been carried out.

West Swale

5.21 **West Swale** (51˚25'N., 0˚44'E.) is the W entrance of The Swale, the narrow and tortuous channel which separates the Idle of Sheppey from the coast of Kent. East Swale, the E entrance to the channel, is described in paragraph 4.30.

The entrance channel, located 1.5 miles SSW of Garrison Point, leads across Lapwell Bank and between The Lappel, on its E side, and Queenborough Spit, on its W side. The channel continues in a S direction for about 0.5 mile and then curves NW for 0.5 mile before turning S again around Long Point. This NW stretch is known as Loden Hope. From Long Point, the channel continues in a SSE direction for 2 miles through Long Reach and Horse Reach to Kingsferry Bridge.

Sector lights and lighted buoys mark the channel; however, the best time for navigating is when the mud flats are visible.

Tides—Currents.—The tidal currents in The Swale are subject to considerable variation. The incoming and outgoing currents at both entrances are strongest soon after they begin, but decrease as the banks cover. The greatest spring velocities, about 3.5 knots, are attained near Kingsferry Bridge.

Depths—Limitations.—There is a least depth of 3.2m in the approach channel which leads across Lapwell Bank. A depth of 5.5m can be carried as far as West Point, located about 0.9 mile S of the entrance. There are depths of 3.3 to 5.5m near the center of the fairway up to Long Point, 0.4 mile W of West Point. The least depth in the fairway from Long Point, through Long Reach and Horse Reach, to Kingsferry Bridge is reported to be 3.2m. Between Kingsferry Bridge and Grovehust Coal Jetty, about 0.3 mile NNW of Milton Creek, the least charted depth in the fairway is reported to be 2.2m.

Pilotage.—Pilots for The Swale, including Ridham Dock, are available and are provided by the River Medway Authority at Garrison Point.

Queenborough (51˚25'N., 0˚45'E.) stands on the W side of the Isle of Sheppey at the E side of West Swale. The harbor, which dries, is entered through The Creek, a buoyed narrow channel. Small commercial vessels can be handled. In addition, there are numerous yacht moorings on both sides of the harbor.

Washer Wharf, used for loading scrap metals, has a berth 110m long with a depth of 8m alongside at HWS.

Mooring buoys are also available adjacent to the fairway off Queenborough.

5.22 The **Kingsferry Bridge** (51˚23'N., 0˚45'E.) spans The Swale nearly 1.8 miles SSE of Long Point. The bridge has a rising center span with a headroom of 29m when fully open. The maximum beam allowed through is 16.8m.

Vessels can communicate with the bridge control by VHF. Range lights, in line bearing 147.5˚, lead through the opened

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part of the bridge. These lights stand on the SW shore of the channel, about 0.4 mile SSE of the bridge.

Signals.—Control lights are exhibited from the two buttresses of the bridge for both upstream and downstream traffic, as follows:

1. No lights shown indicates that the bridge is down.
2. Red and green quick flashing lights (vertically disposed) indicate that the center span is lifting.
3. A green fixed light indicates that the bridge is open.
4. A red quick flashing light indicates that the bridge is unable to lift and vessels should keep clear.
5. The inner faces of the four buttresses are marked by red fixed lights to indicate span width.

Caution.—A submarine cable and a submarine pipeline cross the channel close SE of the bridge. Another submarine cable crosses the channel 0.8 mile NW of the bridge.

Two overhead power cables, with vertical clearances of 31m, span the channel close SE of the bridge.

Ridham Dock (51˚23'N., 0˚46'E.), a small tidal basin, is situated on the SW side of The Swale, about 0.5 mile SE of Kingsferry Bridge. Vessels up to 102m in length, 16.8m beam, and 6.7m draft can be accommodated. Vessels usually dock on HW and take the soft mud ground at LW.

The River Medway (continued)

5.23 Saltpan Reach (51˚26'N., 0˚42'E.), the W continuation of the river from Sheerness, lies between the S side of the Isle of Grain and the marshy outlines of Deadmans Island and Burntwick Island.

The depths within this reach are somewhat irregular and vary from 4.8 to 20m. An obstruction, lying near the middle of the reach, has a least depth of 8.8m and is marked by a lighted buoy.

It is reported that deep-water mooring buoys are situated in the S part of this reach and are used by LASH vessels.

Thamesport (51˚26'N., 0˚42'E.) (World Port Index No. 31376), an extensive container terminal, is situated on the S side of the Isle of Grain at the site of the former oil terminal. The conspicuous gantry cranes standing on the wharf are visible from seaward. The terminal has 650m of berthage, with a depth of 13.5m alongside. Large container vessels up to 115,000 dwt and 11m draft can be accommodated.

The former oil terminal has six jetties. No. 1 Jetty and No. 2 Jetty are located at the W side of the container terminal. No. 1 Jetty, which can accommodate tankers up to 250m in length, has a depth of 11m alongside. No. 2 Jetty is no longer used.

No. 6 Jetty, No. 7 Jetty, No. 8 Jetty, and No. 9 Jetty are located at the E side of the container terminal. No. 6 Jetty is used by bulk carriers, but No. 7 Jetty, No. 8 Jetty, and No. 9 Jetty are no longer in use.

5.24 Kethole Reach (51˚25'N., 0˚39'E.), about 1 mile long, leads SSW from the W end of Saltpan Reach to Long Reach. Its NW side is formed by Stoke Ooze, a drying mud flat, across which two causeways lead to river berths. The SE side of the reach consists of saltings. A wreck, with a depth of 2.2m, lies on the W side of the reach and is marked by a buoy.

Thamesport Container Terminal

Bee Ness Jetty (51˚25.3'N., 0˚39.0'E.), situated at the NW side of the reach, has a berth at the end of a causeway which has a depth alongside of 13m at HWS. East Hoo Creek, entered close S of the jetty head, leads to a small inner spur berth. It was reported (2000) that this jetty is no longer in use.

Oakham Ness Jetty (51˚24.9'N., 0˚38.7'E.), situated at the SW side of the reach, has a tanker berth at the head of a causeway. There are depths alongside of 16.7m at HWS and 11m at LWS. Vessels up to 55,000 dwt and 229m in length can be handled.

Otterham Creek is entered from Half Acre Creek, which leads SSW from the junction of Long Reach and Kethole Reach. Otterham Quay (Rainham) is situated at the head of the creek and has 192m of quayage; however, due to siltation, these berths are no longer used by commercial shipping.

Long Reach (51˚28'N., 0˚15'E.) continues W for 2 miles from the vicinity of Oakham Ness Jetty between saltings, marshes, and mud banks, which dry. A conspicuous chimney, 198m high, stands at the power station which is situated on the N side of the W end of this reach. Several prominent oil storage tanks are situated 0.3 mile ENE of the chimney. There is a least charted depth of 5.8m in the channel through Long Reach.

Kingsnorth Jetty (51˚24.7'N., 0˚36.4'E.), extends S from the power station into the reach and is mainly used for the import of coal. The berth has depths alongside of 7.3m at LWS and 13.2m HWS.

Caution.—A foul area, the limits of which are shown on the chart, lies in the N part of Kethole Reach; wreckage possibly exists in the river bed within this area.

5.25 Pinup Reach (51˚24'N., 0˚36'E.), also known as Folly Reach, is a short leg in the channel which connects Long Reach and Gillingham Reach. It lies between Darnett Ness and Folly Point, about 0.5 mile SW. Derelict circular forts stand on both these points. Hoo Flats and the E end of Hoo Island are located on the NW side of the reach, and Bishop Marsh and Nor Marsh lie on the SE side. The fairway has a least charted depth of 6m through this reach.

Gillingham Reach (51˚24'N., 0˚34'E.) extends 0.8 mile W from Folly Point and leads between Hoo Island, on the N side, and Copperhouse, Cinque Port, and Gillingham Marshes, on

the S side. The entrances to Chatham Docks are situated at the W end this reach and the town of Gillingham stands along the shore to the E of the port.

Two piers and an extensive marina are situated close SE of the entrance to the port. The marina is comprised of a tidal basin, on the W side, and a wet basin, on the E side. Craft up to 22m in length and 2.5m draft can be accommodated in the tidal basin. Craft up to 20m in length and 5m draft can enter the wet basin through a lock at HW.

Courtesy of the Port of Chatham

Chatham Docks

Chatham Docks (51˚24'N., 0˚33'E.)

World Port Index No. 31390

5.26 Chatham Docks, the former Naval Dockyard, comprises three wet basins and five drydocks situated on St. Mary's Island.

Tides—Currents.—Tides rise at Chatham Docks is about 6.1m at springs and 4.8m at neaps.

Depths—Limitations.—The dock complex is entered through two locks situated on the W side of Gillingham Reach.

South Lock is 145.9m long, 28.6m wide at the coping level, and has a depth on the centerline over the sill of 4.2m. North Lock is 145.2m long, 26.6m wide at the coping level, and has a depth on the centerline over the sill of 4.7m. There is a maintained depth of 5.2m in the approach to the North Lock and 4.7m in the approach to the South Lock, although it has been reported (1996) that there is less water in the approaches to these locks.

Commercial facilities for shipping are only situated within one basin. These consist of eight berths, 122 to 168m long, with depths of 8.5m alongside. It is reported that the other basins are being developed into a marina.

Generally, vessels up to 143m in length, 25m beam, and 8m draft can be accommodated. Vessels of greater length than the locks can be handled by canaling through at HW. There are facilities for container, ro-ro, and vehicle ferries.

5.27 The River Medway above Chatham Docks—Short Reach (51˚24'N., 0˚33'E.) extends NW for about 0.5 mile from the entrance of the wet docks between the walled bank of St. Mary's Island and the drying mud flat lying NW of Hoo Island. Several mooring buoys and a yacht marina are situated on the NE side of this reach. There is a least charted depth of 3.7m in the fairway.

Cockham Reach, a bend in the river, extends 0.5 mile WNW from Short Reach. The N bank is fringed by shingle and the S bank by a mud flat. Yacht moorings lie adjacent to each side of the fairway. There is a least charted depth of 2.7m in the fairway.

Upnor Reach extends 0.6 mile SSW from Cockham Reach. Its banks are mostly walled and fringed by drying mud flats. There is a least charted depth of 3.3m in the fairway. Upnor Jetty, an L-shaped jetty, is situated on the W side of the reach and has a depth of 5m alongside. Royal Engineers Jetty, with mooring buoys close SSW, is situated 0.4 mile SSW of Upnor Jetty. St. Mary's Wharf and a pontoon berth, with depths of 2 to 4m alongside, are situated on the E side of the reach.

Chatham Reach, about 1 mile long, is the S continuation of Upnor Reach. There is a least charted depth of 2.4m in the fairway. The W bank consists of marshland which terminates at Chatham Ness (51˚23'N., 0˚31'E.), a low and rounded point formed of reclaimed land. Several piers, wharves, and dry docks are situated at the E side of the reach and are mostly all disused. The town of Chatham stands at the S end of this reach. Brompton and Rochester stand, respectively, NE and NW of Chatham.

Limehouse Reach, the NNW continuation of Chatham Reach, extends between Chatham Ness and Gashouse Point, 0.5 mile NW. The S part of the NE bank consists of marshland fronted by a drying flat; the N part is mostly walled and bordered by the ruins of a cement works. The SW bank is fronted by wharves, which dry alongside, and numerous mooring buoys used by barges, are situated within the reach. The charted depths in the reach vary from 2.1 to 8.2m, with the greatest depths lying in the SE part, close to the SW bank.

Bridge Reach, 0.3 mile long, is the SW turn of the river leading to Rochester Bridge. The N bank is walled and backed by the town of Strood. The charted depths in the channel are very irregular and vary from 0.3 to 7.8m. Several wharves and mooring buoys are situated within the reach and are mainly used for lightering operations. In addition, three private industry wharves are situated within the area and have depths alongside of 4 to 9m at HWS and 3 to 7.3m at HWN. Vessels up to 120m in length and 7.6m draft can be accommodated.

Rochester Bridge (51˚23'N., 0˚30'E.) consists of three bridges, one being an arched bridge, with two metal bridges standing close NE of it. The center span of the bridge, which is marked by lights, has a vertical clearance of 5.9m at MHWS and a least charted depth of 0.6m under it; the greatest depth, 2.1m, lies under the N span.

Tower Reach leads above the bridge and shoals rapidly. Several marinas and yacht club facilities are situated along its banks.